

# Nutrition for Older Adults

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## Outline

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## Introduction

- The nutritional needs change throughout the life cycle but a balanced, varied, nutritionally sound diet is vital to good health at all stages of our lives.
- Proper nutrition and regular activity are two of the most effective tools in the prevention of heart disease, diabetes, osteoporosis, and other conditions commonly associated with ageing.
- Keeping yourself healthy will help reduce the likelihood of becoming sick.

- Exercise plays a very important role in achieving body fat (weight) loss for many reasons. Dieting alone often results in the loss of lean tissue that will slow the metabolic rate and impair progress, along with significantly decreasing strength. In addition to improving body composition, exercise has positive effects on blood pressure, serum cholesterol levels, and cardiorespiratory function.



- Therefore, for optimal health benefits it would be wise to combine a healthy eating pattern with a regular program of physical activity.

## Canada's Food Guide to Healthy Eating

<b>Grain Products</b> <b>5-12</b> <small>SERVINGS PER DAY</small>	<table border="0"> <tr> <td style="text-align: center;">1 serving</td> <td style="text-align: center;">2 servings</td> </tr> <tr> <td style="text-align: center;">           1 Slice            Cold Cereal 30 g         </td> <td style="text-align: center;">           Hot Cereal 175 mL / 3/4 cup            1 Bagel, Pita or Bun            Pasta or Rice 250 mL / 1 cup         </td> </tr> </table>	1 serving	2 servings	1 Slice Cold Cereal 30 g	Hot Cereal 175 mL / 3/4 cup 1 Bagel, Pita or Bun Pasta or Rice 250 mL / 1 cup
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<b>Vegetables and Fruit</b> <b>5-10</b> <small>SERVINGS PER DAY</small>	<table border="0"> <tr> <td style="text-align: center;">1 serving</td> <td style="text-align: center;">Juice</td> </tr> <tr> <td style="text-align: center;">           Fresh, Frozen or Canned Vegetables 125 mL / 1/2 cup            1 Medium Size Vegetable or Fruit         </td> <td style="text-align: center;">           Salad 250 mL / 1 cup            Juice 125 mL / 1/2 cup         </td> </tr> </table>	1 serving	Juice	Fresh, Frozen or Canned Vegetables 125 mL / 1/2 cup 1 Medium Size Vegetable or Fruit	Salad 250 mL / 1 cup Juice 125 mL / 1/2 cup
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<b>Milk Products</b> <b>Servings per Day</b> <small>Children 4-8 years: 2-3            Youth 10-18 years: 3-4            Adults: 2-4            Pregnant and Breast-feeding Women: 3-4</small>	<table border="0"> <tr> <td style="text-align: center;">1 serving</td> <td style="text-align: center;">175 g / 3/4 cup</td> </tr> <tr> <td style="text-align: center;">           250 mL / 1 cup            2"x1"x1" 50 g            2 Slices 50 g         </td> <td style="text-align: center;">           Peanut Butter 30 mL / 2 tbsp         </td> </tr> </table>	1 serving	175 g / 3/4 cup	250 mL / 1 cup 2"x1"x1" 50 g 2 Slices 50 g	Peanut Butter 30 mL / 2 tbsp
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<b>Meat and Alternatives</b> <b>2-3</b> <small>SERVINGS PER DAY</small>	<table border="0"> <tr> <td style="text-align: center;">1 serving</td> <td style="text-align: center;">Peanut Butter 30 mL / 2 tbsp</td> </tr> <tr> <td style="text-align: center;">           Meat, Poultry or Fish 50-100 g            53-203 Can 50-100 g            1-2 Eggs         </td> <td style="text-align: center;">           Beans 125-250mL            100 g / 1/2 cup         </td> </tr> </table>	1 serving	Peanut Butter 30 mL / 2 tbsp	Meat, Poultry or Fish 50-100 g 53-203 Can 50-100 g 1-2 Eggs	Beans 125-250mL 100 g / 1/2 cup
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<b>Other Foods</b> <small>Taste and enjoyment can also come from other foods and beverages that are not part of the 4 food groups. Some of these foods are higher in fat or calories, so use these foods in moderation.</small>					

## Nutrition for Older Adults

- As adults change, many factors may influence their food choices including social and economic variables such as the loss of a loved one, loneliness, lack of appetite and boredom.
- In addition, insufficient resources, lack of financial and personal support and the inconvenience of meal planning and preparation may interfere with proper dietary intake patterns.
- Ultimately, this may lead to changes in their health and nutritional status.

## Physiological Changes

- Decrease in lean body tissue and increase in body fat, decreasing resting metabolic rate and reducing energy needs
- Decreased exercise capacity (decreased  $VO_2$ max, decreased red blood cells, diminished sense of balance)
- Loss of bone mass, increasing the risk of osteoporosis
- Decline in immune function, enhancing the risk of infection

## Physiological Changes

- Reduced taste and smell, contributing to lack of appetite
- Tooth loss and dry mouth, compromising food intake
- Decline in kidney function and in the thirst mechanism, increasing the risk of dehydration
- Changes in gastrointestinal function, contributing to constipation and impaired nutrient absorption

## Nutrition – Healthy Food Choices

- Nutrient-dense foods to meet vitamin and mineral needs within reduced energy requirements
- Milk products, which are excellent sources of calcium and vitamin D to maintain bone health
- Foods rich in protein, vitamins A, B6, C, D, and E, as well as zinc, for a healthy immune system

## Healthy Food Choices

- Colourful and tasty foods to stimulate appetites.
- Texture modified foods to facilitate chewing and swallowing.
- Increased fluid and fibre intakes to minimize dehydration and digestive disturbances.
- Some common nutritional deficiencies in the elderly population are: fibre, calcium, water, vitamins B6, D and E, zinc, iron and protein.

## Important Nutrients

- Fibre
- Protein
- Calcium
- Antioxidants
- Water
- Zinc
- Iron



## Fibre

- Fibre, a complex carbohydrate, is generally defined as the part of a plant that cannot be digested, thus, it adds virtually no calories to the diet.
- However, there are many important roles that fibre may play in our overall health.
  - A high-fibre diet helps reduce the production of cholesterol, increases cholesterol excretion and reduces blood pressure, all of which will in turn help to lower the risk for heart disease.

- Types of fibre
  - There are two types of fibre, those that are water-soluble and those that are insoluble in water.



- **Water-soluble fibre**

- Water-soluble fibres play a very important role in lowering cholesterol levels. Water-soluble fibres also slow the rate of glucose (sugar) absorption, which is important for people with diabetes.
- Some sources of soluble fibres include: fruits (apples, pear, citrus, strawberries), vegetables, dried beans and peas, nuts and seeds, brown rice, barley, oat and rice bran. Products that contain oat fibre can be labelled heart healthy.

- **Insoluble fibre**

- Insoluble fibre promotes regularity because it keeps products moving through the digestive tract. It is also thought to reduce colon cancer. Insoluble fibre may also alleviate some digestive disorders.
- Some sources of insoluble fibres include: wheat and corn bran, whole-grain breads and cereals, vegetables, fruit skins and nuts.



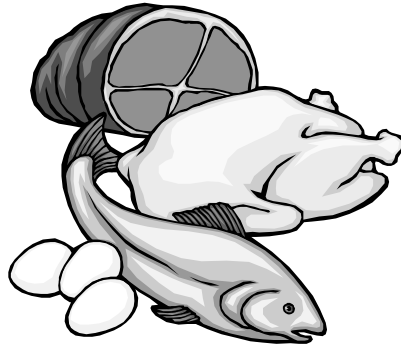
## Fibre

- Bulky, high-fibre foods may also help with weight control because fibre when saturated with water will fill you up without adding calories.
- Foods with fibre also take longer to chew, which helps slow down the rate at which you eat.

- Recommendations
  - It is recommended that Canadian adults consume 35 grams of fibre per day.
  - In order to ensure adequate fibre intake, an individual should be certain to obtain 50-60 % of the daily energy intake from complex carbohydrates.
  - Any dietary changes, which may result in a substantial increase in dietary fibre intake, should be made gradually in order to provide the body with adequate opportunity to adjust.

## Protein

- Protein is essential at any age but, in the later years of life, protein plays an integral role in the maintenance of body tissue and is critical to the body's immune system.



## Protein

- Insufficient protein intake may result in an accelerated loss of muscle tissue, increased risk of infection and a decreased ability to provide for support during periods of trauma and infection.



## Protein

- In general, with age the energy demands of an individual will decrease due to a lower level of activity and a decrease in lean tissue.
- Thus, the goal as you age is to pick foods that are higher in protein and nutrients and lower in fat and calories.

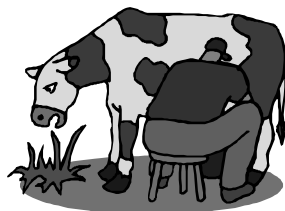
## Protein

- The need for protein is likely similar for both old and young adults.
- Recommendations
  - Thus, men and women over the age of 50 should consume 60-70 grams of protein per day or, approximately 0.8 to 1 gram of protein per kg of body weight.

## Protein

- According to Canada's food guide to healthy eating, adults should consume 2-3 servings of meat and alternatives, along with 2-4 servings of milk and milk products per day. This should supply adequate protein when combined with a proper diet of grains, which also supply small amounts of protein.

- Top protein sources include
  - meat, poultry, fish, eggs, milk, cheese, yogurt, ice cream, peanuts, peanut butter, nuts and seeds.



## Calcium

- Calcium is an essential mineral used for building and maintaining strong bones and it also plays a role in helping the muscles contract and the heart beat. In addition, calcium regulates processes such as blood clotting, cell division and nerve impulses.
- If you are lactose intolerant, try lactose-free milk and lactose-free milk products as well as calcium-fortified foods such as breakfast cereals & bars.



## Calcium

- Current statistics show that three out of every four adult women do not meet the recommended daily intake of 1200 mg of calcium per day.
- This also may affect other vital nutrients, as diets low in calcium are often low in vitamin D, vitamin A, vitamins B6 and B12 as well as riboflavin, magnesium, potassium and folate.

## Calcium

- Calcium plays a role in the prevention and treatment of a number of diseases or conditions commonly associated with ageing including:
  - Osteoporosis (bone degeneration)
  - Hypertension (high blood pressure)
  - Colon cancer
  - Kidney stones

## Calcium

- The disease most commonly associated with insufficient calcium intake is osteoporosis.
- Following menopause, the estrogen levels in women fall, causing a decline in bone strength.
- Adequate calcium intake may prevent additional bone loss and may help build new bone when combined with weight bearing activity such as walking, dancing, tennis, golf (without the cart), and also strength training.

## Antioxidants

- Antioxidants are vitamins, minerals, and other compounds found in foods or taken as pills that can help slow down or prevent the oxidation process, and thus help prevent or repair damage done to your body's cells by free radicals.

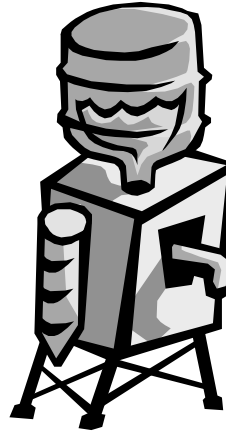


## Antioxidants

- Antioxidants have also been shown to increase immune function and possibly decrease risk of infection and cancer.
- Both macular degeneration and cataracts have been associated with diets that are low in fruits and vegetables.
- Some examples of vitamin and mineral antioxidants include; carotenoids (beta-carotene), copper, magnesium, selenium, vitamin C, vitamin E and zinc.

## Water

- Dehydration is one of the most frequent causes of hospitalization among people over the age of 65. Dehydration is a common concern in the elderly because with age, the thirst mechanism becomes imprecise, the ability of kidneys to retain fluid decreases and there are lower amounts of total body water.



## Water

- These physiological changes may result in a variety of problems such as muscle weakness, mental confusion, inability to tolerate high environmental temperatures and intestinal distress.
- Some of the early signs of dehydration are; dry mouth, flushed skin, fatigue, headache, increased breathing and pulse rate and dizziness.



## Zinc

- Zinc deficiency is very common (90+% ) of elderly due to reductions in absorption (often due to medications) and this further complicates nutritional concerns because zinc deficiency depresses appetite and blunts sense of taste often leading to very low energy intakes.



## Zinc

- Most of the zinc in the typical diet comes from animal products, such as:
  - Meat.
  - Liver.
  - Eggs.
  - Seafood (especially oysters).
- Zinc is also available from other food sources, such as legumes, whole-grain cereals, wheat germ and nuts. However, zinc from these sources may not be absorbed as well as zinc from animal products.

## Iron

- Iron deficiency is frequently less common in elderly women because iron losses due to menstruation cease.



## Iron

- However, this can still occur in elderly men and some women due to:
  - Low energy diets.
  - Chronic blood loss from ulcers or haemorrhoids.
  - Poorer absorption due to reduced stomach acid secretion, excessive antacid use (which interferes with iron absorption), or use of medicines that increase blood loss (anticoagulants, arthritis medication).

## The Nutrition and Aging Relationship

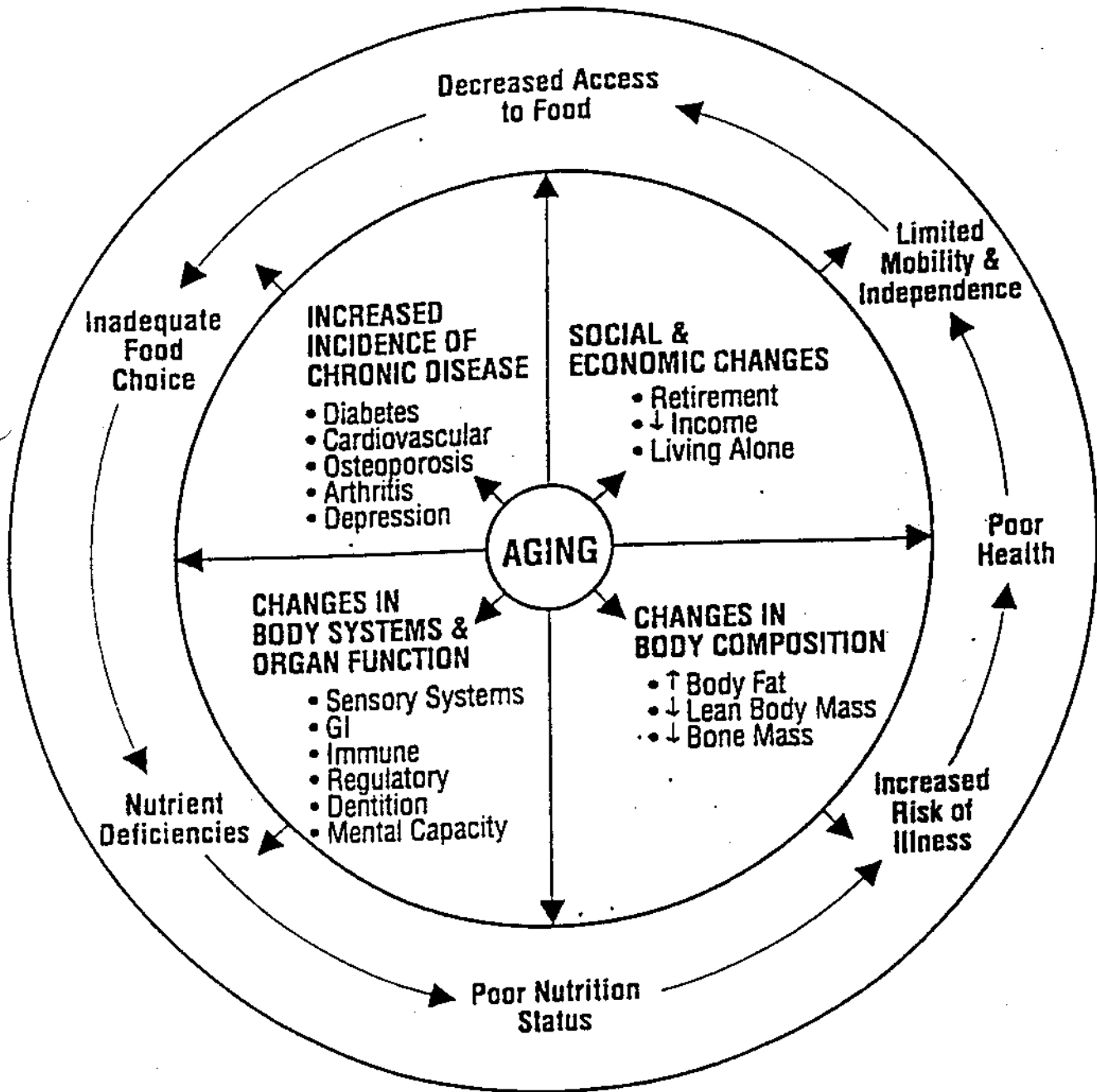


Table 1.1  
EFFECTS OF AGING ON FACTORS INFLUENCING NUTRITIONAL STATUS

<b>Physiological Changes</b>	
<p><i>Musculoskeletal system</i></p> <ul style="list-style-type: none"> <li>↓ in bone mass and stature</li> <li>↓ in lean body mass which is replaced by body fat</li> <li>↓ in body water</li> </ul> <p><i>Gastrointestinal system</i></p> <ul style="list-style-type: none"> <li>↓ in digestive/absorptive function</li> <li>↓ in bowel functions which may result in constipation</li> </ul> <p><i>Hepatic/Renal system</i></p> <ul style="list-style-type: none"> <li>↓ in liver size and function</li> <li>↓ in renal capacity</li> </ul>	<p><i>Cardiopulmonary system</i></p> <ul style="list-style-type: none"> <li>↑ in blood pressure</li> <li>↓ in lung capacity</li> <li>↓ in adaptation to physical exertion</li> </ul> <p><i>Oral cavity</i></p> <ul style="list-style-type: none"> <li>↓ in gum and dental/denture stature</li> <li>↓ in saliva production</li> <li>↓ in esophageal muscle tone</li> </ul> <p><i>Sensory changes</i></p> <ul style="list-style-type: none"> <li>↓ in taste, smell, vision, and hearing</li> </ul>
<b>Psychological Factors</b>	↑ in risk for depression and dementia
<b>Socioeconomic Factors</b>	↑ in risk for social isolation, problems with transportation, housing, and decreasing income
<b>Functional Abilities</b>	↑ in risk for decreasing functional abilities such as mobility, shopping, cooking, and feeding skills
<b>Chronic Diseases</b>	↑ in risk for cardiovascular disease, cancer, diabetes, arthritis, and Alzheimer's disease

Figure 4.1  
THE DETERMINE CHECKLIST

*The Warning Signs of poor nutritional health are often overlooked. Use this checklist to find out if you or someone you know is at nutritional risk.*

# DETERMINE YOUR NUTRITIONAL HEALTH


Read the statements below. Circle the number in the yes column for those that apply to you or someone you know. For each yes answer, score the number in the box. Total your nutritional score.

	YES
I have an illness or condition that made me change the kind and/or amount of food I eat.	2
I eat fewer than 2 meals per day.	3
I eat few fruits or vegetables, or milk products.	2
I have 3 or more drinks of beer, liquor or wine almost every day.	2
I have tooth or mouth problems that make it hard for me to eat.	2
I don't always have enough money to buy the food I need.	4
I eat alone most of the time.	1
I take 3 or more different prescribed or over-the-counter drugs a day.	1
Without wanting to, I have lost or gained 10 pounds in the last 6 months.	2
I am not always physically able to shop, cook and/or feed myself.	2
<b>TOTAL</b>	

**Total Your Nutritional Score. If It's —**

- 0-2**      **Good!** Recheck your nutritional score in 6 months.
- 3-5**      **You are at moderate nutritional risk.** See what can be done to improve your eating habits and lifestyle. Your office on aging, senior nutrition program, senior citizens center or health department can help. Recheck your nutritional score in 3 months.
- 6 or more**      **You are at high nutritional risk.** Bring this checklist the next time you see your doctor, dietitian or other qualified health or social service professional.

*These materials developed and distributed by the Nutrition Screening Initiative, a project of*

 AMERICAN ACADEMY OF FAMILY PHYSICIANS

 THE AMERICAN DIETETIC ASSOCIATION

 NATIONAL COUNCIL ON THE AGING, INC.

**Remember that warning signs suggest risk, but do not represent diagnosis of any condition.**

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